

CLAIMS

What is claimed is:

1 1. A method of generating and displaying in a remote display device
2 indicia representative of a user command, or status information associated with a
3 playback or recorder device, with a plurality of digitally encoded pictures that are
4 decoded by the display device, the method comprising the steps of:
5 receiving a digitally encoded video signal having a plurality of pictures;
6 generating a digitally encoded indicia representing the user command or
7 status information;
8 modifying at least one picture from the plurality of pictures by replacing at
9 least a portion of the picture with the digitally encoded indicia such that the indicia
10 can be decoded and displayed when the picture is decoded and displayed by the
11 remote display device; and
12 transmitting the digitally encoded video signal including the modified picture to
13 the display device.

1 2. The method according to claim 1, wherein receiving step comprises the
2 step of reading the digitally encoded video signal from a storage medium, wherein
3 said generating step and said modifying step are performed during said reading step.

1 3. The method according to claim 2, wherein at least a portion of the
2 digitally encoded indicia is comprised of MPEG encoded intra macroblocks and the
3 intra macroblocks replace the portion of the picture being modified.

1 4. The method according to claim 3, wherein the picture is a bidirectional
2 predictive picture containing a plurality of slices, wherein each slice contains a
3 plurality of picture macroblocks.

1 5. The method according to claim 4, wherein the portion of the
2 bidirectional predictive picture that is replaced by the intra macroblocks that
3 comprise the indicia is a predetermined number of the plurality of picture
4 macroblocks in at least one of the plurality of slices.

1 6. The method according to claim 5, wherein at least one of the plurality
2 of picture macroblocks in at least one of the plurality of slices, which is replaced by
3 one of the intra macroblocks that comprise the indicia, is located at the end of that
4 picture macroblock's corresponding slice.

1 7. The method according to claim 1, wherein the receiving step comprises
2 the step of reading the digitally encoded signal from a storage medium, wherein said
3 generating step is performed prior to said reading step and said modifying step is
4 performed during said reading step.

1 8. The method according to claim 7, wherein at least a portion of the
2 digitally encoded indicia is comprised of MPEG encoded intra macroblocks, wherein
3 the intra macroblocks replace the portion of the picture, wherein the digitally encoded
4 indicia is stored in a table to be accessed during said modifying step.

1 9. The method according to claim 8, wherein the picture is a bidirectional
2 predictive picture containing a plurality of slices, each slice containing a plurality of
3 picture macroblocks.

1 10. The method according to claim 9, wherein the portion of the
2 bidirectional predictive picture that is replaced by the intra macroblocks that
3 comprise the indicia is a predetermined number of the plurality of picture
4 macroblocks in at least one of the plurality of slices.

1 11. The method according to claim 9, wherein at least one of the plurality
2 of picture macroblocks in at least one of the plurality of slices, which is replaced by
3 one of the intra macroblocks that comprise the indicia, is located at the end of that
4 picture macroblock's corresponding slice.

1 12. An apparatus for generating and sending encoded digital video signals
2 representative of a plurality of pictures to a remote display device having a decoder

5 a signal input for receiving a digitally encoded video signal representative of a
6 plurality of pictures;

7 a generator for generating a digitally encoded indicia representing a user
8 command, or status information associated with the apparatus;

9 a processor, coupled to the generator for modifying, in response to the user
10 command, or an event that requires displaying the status information, at least one
11 picture from the plurality of pictures in the encoded digital video signals by replacing
12 at least a portion of the picture with the digitally encoded indicia such that the indicia
13 is decoded and displayed when the picture is decoded and displayed on the display
14 device; and

15 a signal output for transmitting an output signal including the digitally encoded
16 video signal having the modified picture to the remote display device.

13. The apparatus according to claim 12, wherein at least a portion of the
2 digitally encoded indicia is comprised of MPEG encoded intra macroblocks and the
3 intra macroblocks replace the portion of the picture being modified.

1 14. The apparatus according to claim 13, wherein the picture is a
2 bidirectional predictive picture containing a plurality of slices, wherein each slice
3 contains a plurality of picture macroblocks.

1 15. The apparatus according to claim 14, wherein the portion of the
2 bidirectional predictive picture that is replaced by the intra macroblocks that

3 comprise the digitally encoded indicia is a predetermined number of the plurality of
4 picture macroblocks in at least one of the plurality of slices.

1 16. The apparatus according to claim 15, wherein at least one of the
2 plurality of picture macroblocks in at least one of the plurality of slices, which is
3 replaced by one of the intra macroblocks that comprise the digitally encoded indicia,
4 is located at the end of that picture macroblock's corresponding slice.

1 17. The apparatus according to claim 15, further comprising a table,
2 wherein at least a portion of the digitally encoded indicia is comprised of MPEG
3 encoded intra macroblocks, wherein the intra macroblocks replace the portion of the
4 picture being modified, wherein the indicia is stored in the table and the processor is
5 further programmed to access the table during a modifying operation.